

a transmission system for generating and transmitting CIMA signals, the transmission system including:

- a multicarrier signal generator for generating a plurality of carrier signals, the carrier signals having a plurality of frequencies,
- a modulator for modulating the plurality of carriers with at least one information signal, the information signal modulating more than one of the carrier signals, and
- a transmitter for transmitting the modulated carrier signals, and
- a receiver to receive the transmitted, modulated carrier signals for generating a plurality of receive signals, the receiver combining at least two of the receive signals to produce the information signal.

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18. A transmission system for generating and transmitting CIMA signals, the transmission system including:

- a multicarrier signal generator for generating a plurality of carrier signals, the carrier signals having a plurality of frequencies and a phase relationship, the frequencies and the phase relationship being controlled to provide at least one predetermined interference characteristic from combining the carrier signals,
- a modulator for modulating the plurality of carriers with at least one information signal, the information signal modulating more than one of the carrier signals, and
- a transmitter for transmitting the modulated carrier signals.

19. A receiver for receiving and decoding delay-encoded CIMA signals, the receiver including:

- a delay decoder for receiving a plurality of modulated carrier signals having a plurality of frequencies and a plurality of relative delays, the delay decoder providing a predetermined delay to each of the received carrier signals to remove the relative delays, and
- a signal combiner coupled to an output of the delay decoder to combine the delay-decoded signals output from the delay decoder for providing a modulation signal output.

20. A receiver for receiving and separating interfering multicarrier signals, the receiver including:

- a multi-sample collector for collecting a plurality of samples of received multicarrier signals, the received multicarrier signals including at least one desired multicarrier signal and at least one interfering multicarrier signal, and
 - a canceller coupled to the multi-sample collector for receiving the plurality of samples, the canceller separating at least one of the desired multicarrier signals from the samples.
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